

Lab 8 - Dial Pools and Dial Peer Hunting

CCNA Voice Lab 8

Dial Pools and Dial Peer Hunting

Lab Objective:

The objective of this lab exercise is for you to learn and understand how to implement dial pools and dial peer hunting

Topic Description:

Dial peer hunting is used for call coverage instead. Dial peer hunting is implemented by default when you create two or more dial peers that match the same destination pattern but reference different destination devices

Lab Difficulty:

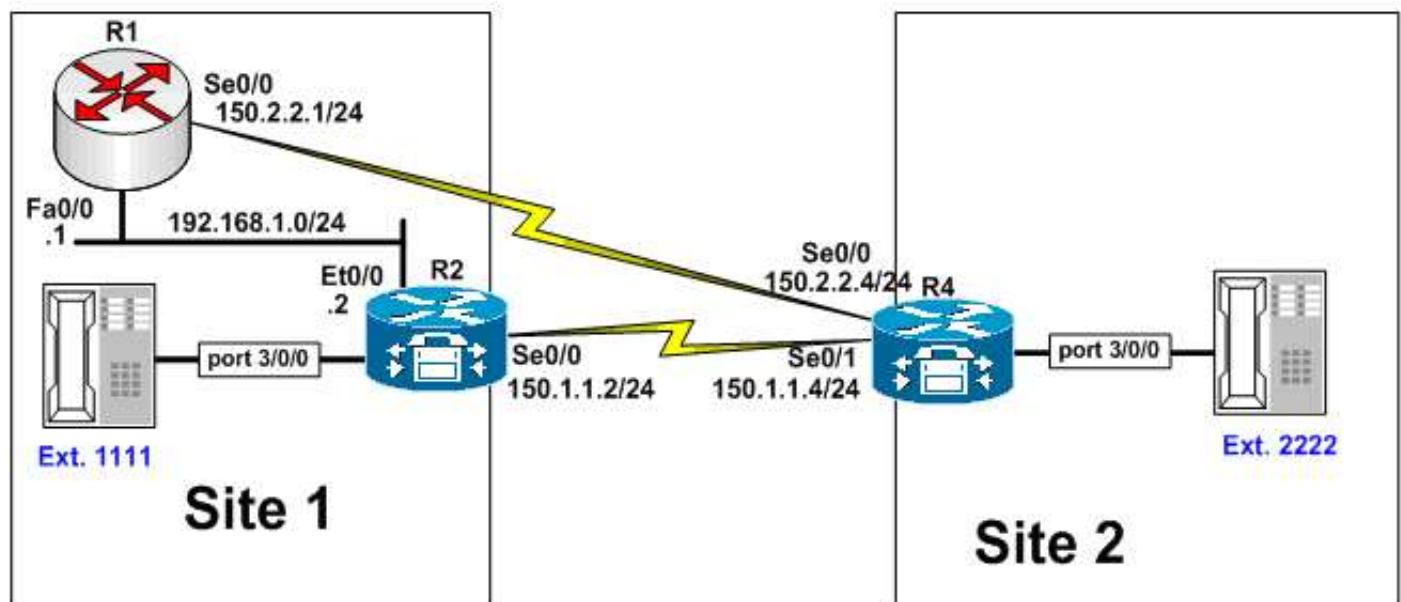
This lab has a difficulty rating of 5/10

Readiness Assessment:

When ready for your exam, you should be able to complete this lab in no more than 15 minutes

Lab Topology:

Please use the following topology to complete this lab exercise:



Lab 8 Configuration Tasks

Task 1:

Configure the hostnames and IP addresses on R1, R2 and R4 as illustrated in the diagram. Configure R4 to provide clocking to R2. Configure the clock rate on R4 as 800Kbps

Task 2:

Configure WAN connectivity between R1 and R4 using the IP addresses specified in the diagram. Configure R4 to provide a clock rate of 800Kbps to R1

Task 3:

Configure IP connectivity between R1 and R2 using the addresses illustrated in the diagram

Task 4:

Configure IP connectivity between R1, R2, and R4 using a routing protocol of your choice

Task 5:

Configure the POTS dial peers on R2 and R4 as illustrated in the diagram. Use any dial peer numbers that you want to use

Task 6:

Configure two VoIP dial peers on R2 to the extension on R4. The 1st (primary) dial peer should forward calls via the Serial0/0 connection directly to R4 and the 2nd (backup) dial peer should forward calls via R1

Task 7:

Configure two VoIP dial peers on R4 to the extension on R2. The 1st (primary) dial peer should forward calls via the connection to R1 and the 2nd (backup) dial peer should forward calls via the Serial0/1 connection directly to R4

Task 8:

Verify your configuration using the appropriate Cisco IOS **show** and **debug** commands

Lab 8 Configuration and Verification

Task 1:

```
Router(config)#hostname R1
R1(config)#exit
```

```
Router(config)#hostname R2
R2(config)#interface Serial0/0
R2(config-if)#description .Connected To R4 Serial 0/1.
R2(config-if)#ip address 150.1.1.2 255.255.255.0
```

```
Router(config)#hostname R4
R4(config)#interface Serial0/1
R4(config-if)#description .Connected To R2 Serial 0/0
R4(config-if)#ip address 150.1.1.4 255.255.255.0
R4(config-if)#clock rate 800000
```

Verify connectivity by performing a simple ping between the two routers

```
R2#ping 150.1.1.4
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 150.1.1.4, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms
```

```
R4#ping 150.1.1.2
```

```
Type escape sequence to abort.
Sending 5, 100-byte ICMP Echos to 150.1.1.2, timeout is 2 seconds:
!!!!
Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/8 ms
```

Task 2:

```
R1(config)#int s0/0
R1(config-if)#description .Connected To R4 Serial 0/0.
R1(config-if)#ip address 150.2.2.1 255.255.255.0
R1(config-if)#no shutdown
```

```
R1(config-if)#exit
```

```
R4(config)#int s0/0
```

```
R4(config-if)#description .Connected To R1 Serial 0/0.
```

```
R4(config-if)#ip address 150.2.2.4 255.255.255.0
```

```
R4(config-if)#clock rate 800000
```

```
R4(config-if)#no shutdown
```

```
R4(config-if)#exit
```

Verify connectivity by performing a simple ping between the two routers

```
R1#ping 150.2.2.4
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 150.2.2.4, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/4 ms

```
R4#ping 150.2.2.1
```

Type escape sequence to abort.

Sending 5, 100-byte ICMP Echos to 150.2.2.1, timeout is 2 seconds:

!!!!

Success rate is 100 percent (5/5), round-trip min/avg/max = 4/4/8 ms

Task 3:

```
R2(config)#int e0/0
```

```
R2(config-if)#description .Connected To R1.
```

```
R2(config-if)#ip address 192.168.1.2 255.255.255.0
```

```
R2(config-if)#no shutdown
```

```
R1(config)#int f0/0
```

```
R1(config-if)#description .Connected To R2.
```

```
R1(config-if)#ip address 192.168.1.1 255.255.255.0
```

```
R1(config-if)#no shutdown
```

```
R1(config-if)#exit
```

NOTE: If you are using the Howtonetwork.net rack to complete this lab exercise, then you will also need to configure Sw1 as follows:

```
hostname Sw1
```

```
!
```

```
vlan 12
```

```
name R1_R2_VLAN
```

```
!
```

```
interface FastEthernet0/2
```

```
description 'Connected To R1 FastEthernet 0/0'
```

```
switchport mode access
```

```
switchport access vlan 12
```

```
no shutdown
```

```
!
```

```
interface FastEthernet0/3
```

```
description 'Connected To R2 FastEthernet 0/0'
```

```
switchport mode access
```

```
switchport access vlan 12
```

```
no shutdown
```

Task 4:

```
R1(config)#router eigrp 100
```

```
R1(config-router)#no auto-summary
```

```
R1(config-router)#network 0.0.0.0
```

```
R1(config-router)#exit
```

```
R2(config)#router eigrp 100
```

```
R2(config-router)#network 0.0.0.0
```

```
!logging router / network events
R2(config-router)#no auto-summary
R2(config-router)#exit
```

```
R4(config)#router eigrp 100
R4(config-router)#network 0.0.0.0
R4(config-router)#no auto-summary
R4(config-router)#exit
```

Verify EIGRP adjacencies and IP connectivity between the three routers:

```
R1#show ip eigrp neighbors
IP-EIGRP neighbors for process 100
H  Address          Interface      Hold Uptime   SRTT  RTO  Q  Seq
   (sec)            (ms)          Cnt Num
1  192.168.1.2       Fa0/0         14 11:56:39  796  4776  0  12
0  150.2.2.4         Se0/0         13 11:56:39   5   200  0  15
R1#
R1#show ip route eigrp
150.1.0.0/24 is subnetted, 1 subnets
D    150.1.1.0 [90/2195456] via 192.168.1.2, 11:56:40, FastEthernet0/0
```

```
R2#show ip eigrp neighbors
IP-EIGRP neighbors for process 100
H  Address          Interface      Hold Uptime   SRTT  RTO  Q  Seq
   (sec)            (ms)          Cnt Num
1  192.168.1.1       Et0/0         10 10:54:52   5   200  0  11
0  150.1.1.4         Se0/0         13 10:56:01   6   200  0  14
R2#
R2#show ip route eigrp
D    192.168.2.0/24 [90/2195456] via 150.1.1.4, 10:54:53, Serial0/0
150.2.0.0/24 is subnetted, 1 subnets
D    150.2.2.0 [90/2195456] via 192.168.1.1, 10:54:53, Ethernet0/0
```

```
R4#show ip eigrp neighbors
IP-EIGRP neighbors for process 100
H  Address          Interface      Hold Uptime   SRTT  RTO  Q  Seq
   (sec)            (ms)          Cnt Num
2  150.2.2.1         Se0/0         12 10:51:01  23   200  0  10
0  150.1.1.2         Se0/1         14 10:52:10  19   200  0  11
R4#
R4#show ip route eigrp
D    192.168.1.0/24 [90/2195456] via 150.2.2.1, 10:51:36, Serial0/0
[90/2195456] via 150.1.1.2, 10:51:36, Serial0/1
```

Task 5:

```
R2(config)#dial-peer voice 1 pots
R2(config-dial-peer)#destination-pattern 1111
R2(config-dial-peer)#port 3/0/0
R2(config-dial-peer)#exit
```

```
R4(config)#dial-peer voice 1 pots
R4(config-dial-peer)#destination-pattern 2222
R4(config-dial-peer)#port 3/0/0
R4(config-dial-peer)#exit
```

Task 6:

```
R2(config)#dial-peer voice 2 voip
R2(config-dial-peer)#destination-pattern 2222
R2(config-dial-peer)#session target ipv4:150.1.1.4
R2(config-dial-peer)#exit
R2(config)#dial-peer voice 3 voip
R2(config-dial-peer)#destination-pattern 2222
R2(config-dial-peer)#session target ipv4:150.2.2.4
R2(config-dial-peer)#preference 1
```

```
R2(config-dial-peer)#exit
```

Task 7:

```
R4(config)#dial-peer voice 2 voip
R4(config-dial-peer)#destination-pattern 1111
R4(config-dial-peer)#session target ipv4:192.168.1.2
R4(config-dial-peer)#exit
R4(config)#dial-peer voice 3 voip
R4(config-dial-peer)#destination-pattern 1111
R4(config-dial-peer)#session target ipv4:150.1.1.2
R4(config-dial-peer)#preference 1
R4(config-dial-peer)#exit
```

Task 8:

First, verify correct dial peer forwarding from R2:

```
R2#show dialplan number 2222 | i Voice|Type|type|preference
VoiceOverIpPeer2
  peer type = voice, information type = voice,
  answer-address = '', preference=0,
  numbering Type = 'unknown'
  type = voip, session-target = 'ipv4:150.1.1.4',
  RTP dynamic payload type values: NTE = 101
  RTP comfort noise payload type = 19
  Max Redirects = 1, signaling-type = cas,
VoiceOverIpPeer3
  peer type = voice, information type = voice,
  answer-address = '', preference=1,
  numbering Type = 'unknown'
  type = voip, session-target = 'ipv4:150.2.2.4',
  RTP dynamic payload type values: NTE = 101
  RTP comfort noise payload type = 19
  Max Redirects = 1, signaling-type = cas,
```

Next, verify correct dial peer forwarding for R4:

```
R4#show dialplan number 1111 | i Voice|Type|type|preference
VoiceOverIpPeer2
  peer type = voice, information type = voice,
  answer-address = '', preference=0,
  numbering Type = 'unknown'
  type = voip, session-target = 'ipv4:192.168.1.2',
  RTP dynamic payload type values: NTE = 101
  RTP comfort noise payload type = 19
  Max Redirects = 1, signaling-type = cas,
VoiceOverIpPeer3
  peer type = voice, information type = voice,
  answer-address = '', preference=1,
  numbering Type = 'unknown'
  type = voip, session-target = 'ipv4:150.1.1.2',
  RTP dynamic payload type values: NTE = 101
  RTP comfort noise payload type = 19
  Max Redirects = 1, signaling-type = cas,
```

Next, place a call between R2 and R4 and verify the correct path is taken. Here, a call is placed from R2 to R4 and R2 sends it using the Serial link between itself and R4:

```
R2#show call active voice compact
<callID> A/O FAX T<sec> Codec type Peer Address IP R<ip>:<udp>
Total call-legs: 2
  5 ANS T14 g729r8 TELE P1111
  6 ORG T14 g729r8 VOIP P2222 150.1.1.4:18398
```

Next, dial peer 2 on R2 is disabled and the call is placed again. This time, the call is routed via R1 and is sent to the IP address of the WAN link between R1 and R4.

sent to the IP address of the WAN link between R1 and R4.

R2(config)#**dial-peer voice 2**

R2(config-dial-peer)#**shut**

R2(config-dial-peer)#**exit**

R2(config)#**exit**

R2#

R2#**show call active voice compact**

R2#show call active voice compact

<callID> A/O FAX T<sec> Codec type Peer Address IP R<ip>:<udp>

Total call-legs: 2

7 ANS T2 g729r8 TELE P1111

8 ORG T2 g729r8 VOIP P2222 **150.1.1.4:18622**

The same would be applicable to calls made from R4.

Final Relevant Configuration R1:

R1#**show running-config**

Building configuration...

Current configuration : 1586 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname R1

!

!

!

!

interface FastEthernet0/0

description .Connected To R2.

ip address 192.168.1.1 255.255.255.0

!

interface Serial0/0

description .Connected To R4 Serial 0/0.

ip address 150.2.2.1 255.255.255.0

!

router eigrp 100

network 0.0.0.0

no auto-summary

Final Relevant Configuration R2:

R2#**show running-config**

Building configuration...

Current configuration : 1527 bytes

!

version 12.4

service timestamps debug datetime msec

service timestamps log datetime msec

no service password-encryption

!

hostname R2

!

!

!

!

interface Ethernet0/0

description .Connected To R1.

ip address 192.168.1.2 255.255.255.0

!

interface Serial0/0

description .Connected To R4 Serial 0/1.

```

ip address 150.1.1.2 255.255.255.0
!
!
router eigrp 100
 network 0.0.0.0
 no auto-summary
!
!
!
voice-port 3/0/0
!
voice-port 3/0/1
!
voice-port 3/1/0
!
voice-port 3/1/1
!
!
!
!
dial-peer voice 1 pots
 destination-pattern 1111
 port 3/0/0
!
dial-peer voice 2 voip
 destination-pattern 2222
 session target ipv4:150.1.1.4
!
dial-peer voice 3 voip
 preference 1
 destination-pattern 2222
 session target ipv4:150.2.2.4

```

Final Relevant Configuration R4:

R4#**show running-config**

Building configuration...

Current configuration : 1826 bytes

```

!
version 12.4
service timestamps debug datetime msec
service timestamps log datetime msec
no service password-encryption
!
hostname R4
!
!
!
!
interface Serial0/0
 description .Connected To R1 Serial 0/0.
 ip address 150.2.2.4 255.255.255.0
 clock rate 800000
!
interface Serial0/1
 description .Connected To R2 Serial 0/0
 ip address 150.1.1.4 255.255.255.0
 clock rate 800000
!
router eigrp 100
 network 0.0.0.0
 no auto-summary
!

```

```
!  
!  
!  
voice-port 3/0/0  
!  
voice-port 3/0/1  
!  
voice-port 3/1/0  
!  
voice-port 3/1/1  
!  
!  
!  
dial-peer voice 1 pots  
destination-pattern 2222  
port 3/0/0  
!  
dial-peer voice 2 voip  
destination-pattern 1111  
session target ipv4:192.168.1.2  
!  
dial-peer voice 3 voip  
preference 1  
destination-pattern 1111  
session target ipv4:150.1.1.2
```



© 2006-2011 HowtoNetwork.net All Rights Reserved. Reproduction without permission prohibited.